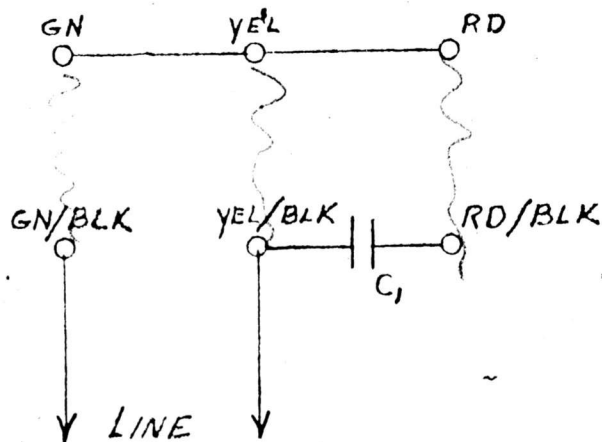


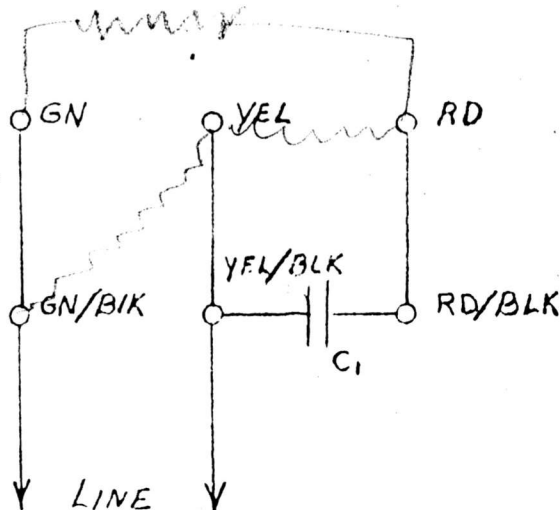
Wiring for 50 cycle motor

220 volts 50 cycles
HSM 20.50-4-540D
2.5 mfd. Capacitor



To change direction reverse Rd/Blk, Yel/Blk

125 volts 50 cycles
HSM 20.50-4-540D
8 mfd. Capacitor



To change direction reverse Rd & Rd/blk, Yel & Yel/blk

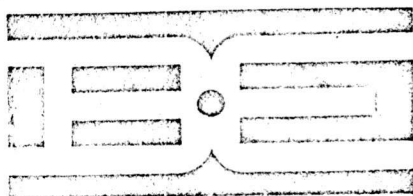
B59

PETER ZETTERMAN
Box 7032
151 07 SÖDERTÄLJE
☎ 0755-675 98

B. 59

Spotmaster 500

ARKIVET
THIRD TRACK



BROADCAST ELECTRONICS, INC.

8800 BROOKVILLE ROAD • SILVER SPRING, MARYLAND • AREA 301 JUNIPER 8-4983

B R O A D C A S T E L E C T R O N I C S , I N C .

SPOTMASTER MODEL 500A - COMPACT

(Recorder-Playback)

SPECIFICATIONS

SIZE:	10-1/4" W, 12-3/4" D, 6-5/8" H
WEIGHT:	20 Lbs.
MOTOR:	Hysteresis Synchronous
OUTPUT LEVEL:	-6 VU variable
OUTPUT IMPEDANCE:	Nominal 500 ohms
FREQUENCY RESPONSE:	50 - 12000 cps ± 2 db
SIGNAL TO NOISE RATIO:	50 db below 2% distortion
HARMONIC DISTORTION:	Less than 2% (600 cps - Normal recording level)
WOW AND FLUTTER:	Less than .2 of 1%
STOP TIME:	1/10 second or better
START TIME:	1/25 second or better
LINE INPUT:	.2 volts (bridging)
MICROPHONE INPUT:	(150 ohms) .5 millivolts
CONTROLS:	Gain, On - Off Record - Play Switch Recording Meter Selector Switch (program, control tone, bias) Start Switch Stop Switch Output Level
POWER REQUIREMENTS:	105-125 v ac, 60 cps, 50 watts (50 cps optional extra)
TRANSISTOR COMPLEMENT:	2N1305 (3) or equivalent 2N217 (5) or equivalent
TUBES:	12AX7 (2)
(Recording Amplifier)	12AU7 (1) 12AV6 (1)
SPEED:	7 1/2 inches per second

* * *

- 1 -

BROADCAST ELECTRONICS, INC.

SPOTMASTER MODEL 500A - COMPACT

INSTALLATION & OPERATING INSTRUCTIONS

1. General

SPOTMASTER Model 500A combination playback and recording units are high quality, compact, tape cartridge machines of professional design for use in radio stations, TV stations, recording studios and similar operations. The recording amplifier is designed to accept audio input levels between -30 and +10 dbm or, if desired, a standard broadcast type dynamic microphone may be plugged directly into the microphone preamplifier. The output level of the playback amplifier is adjustable by means of a variable control located on the rear panel of the equipment. The output circuitry is designed to work into line key inputs of standard broadcast type consoles.

The SPOTMASTER 500A will accept standard NAB tape cartridges, type A, B and C, available in tape lengths from 20 seconds to 31 minutes in playing time, thereby making possible the use of as little as 2 or 3 seconds or as much as 31 minutes of program or spot material on a single cartridge. BE type cartridge storage racks are recommended for cartridge storage.

2. Installation of Playback Units

Playback units are usually installed in a control room or studio within ready access of the operator but, if desired, may be installed at a remote location and operated by means of a remote control unit (BE 101). Units may be placed separately or side by side on any available table top or counter space, or in the case of rack models may be installed in existing racks. Compact units may also be installed on an inclined shelf constructed over the turntables. The output of one or all machines may be connected to a single console line input, but connection of each unit to a separate line input key is recommended where possible. This increases flexibility and provides greater control over individual units. Standard broadcast installation procedures should be followed. Use shielded connecting cables, avoid high hum and magnetic fields, high temperatures, dusty locations, et cetera. Playback units should not be installed directly over a console due to the possible adverse effect of heat on the transistorized amplifiers.

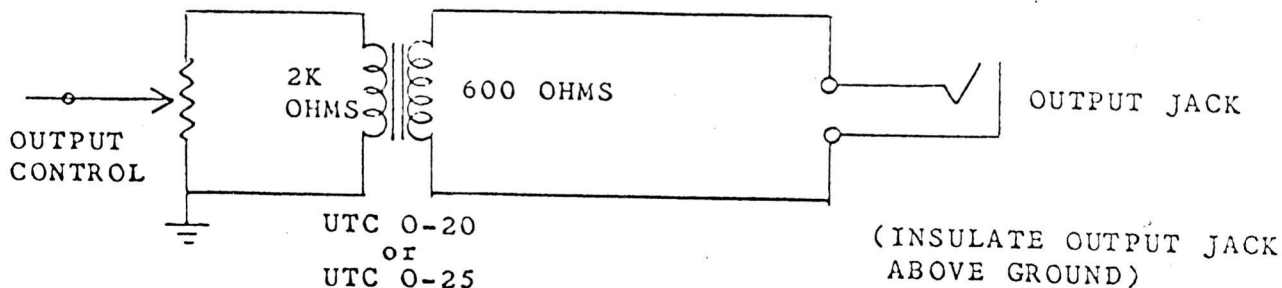
Two output jacks are located on the rear panel of the unit and connected in parallel with the sleeve side grounded to the case. These are standard headphone type jacks and will accept a standard headphone type plug such as Switchcraft Type 40

stage design, the unit may be connected to inputs with impedances as low as 150 ohms and as high as several thousand ohms without serious deterioration in program quality. To connect the playback amplifier to the console, simply install a line between the output jack and a line input of the console.

It is recommended that no more than three machines be connected to a single input. Balance the output of each machine in the group by means of the variable output control on the rear panel of each machine. It may be desirable to use a fixed pad of suitable attenuation before the input to the console depending upon console amplifier gain and design.

NOTE: Since one side of the SPOTMASTER output is "Ground", one side of the line (plug sleeve) should be connected to the station system ground.

OPTIONAL OUTPUT TRANSFORMER WIRING



3. Installation as a Recorder

No particular installation procedure is necessary other than to locate the unit in the desired area, and by means of a standard two circuit phone plug connect from the line input located on the rear panel to the program source (input level approximately -10 VU at 500 ohms) or, if desired, a low impedance dynamic microphone may be plugged into the microphone preamplifier (Cannon XL connector). If the microphone input is used, be certain to remove the phone plug from the line input since this disconnects the microphone preamplifier. It is always advisable to ground the equipment.

4. Recording Process

CAUTION: Before recording, make certain that the cartridge is thoroughly erased on a bulk type eraser. Erase both sides of the cartridge; then tip up and erase exposed tape on open end of cartridge.

Turn "Record-Playback" switch to record position. (After switching from "play" position to "record" position, allow 30 seconds for tube warm-up. Transistors are used in the playback amplifier and are ready for use within 2 seconds after application of power, but vacuum tubes are used in the recording amplifier. Tube filaments are "off" during the playback mode to prolong tube life and minimize heat radiation.) Feed program material into

the recorder line input or plug a microphone directly into recorder microphone input, and set the level by means of the recorder gain control and the VU meter. Best results will be obtained when the meter needle swings to zero only on peaks.

Standard cartridge lengths are 20, 40, 70, 90, 140 seconds, and $3\frac{1}{2}$, $5\frac{1}{2}$, $8\frac{1}{2}$, $10\frac{1}{2}$, 16 and 31 minutes. Check the length of the recording to be made and allow two seconds minimum dead tape after the recording is finished. For instance, a 70 second cartridge should be used when recording a 60 second spot. Additionally, three 20 second spots may be recorded on a 70 second cartridge but a 70 second cartridge should not be used for two 35 second spots.

Load the proper length cartridge in the machine and move the load lever to the "Play" position. This moves the pressure roller into position and energizes the motor and the "ready" lamp in the stop switch. Depress the start switch, then release. "Tightness" of cueing will depend on how quickly program material is started after the start button is depressed. After the recording is made, let the tape run until it cues up automatically and stops at the beginning of the recording. After recording, it is advisable to check recorded cartridges for level, program content and quality.

If you are making a series of spots on one cartridge, allow two seconds to elapse at the end of the first spot, then press the stop button and stop the tape. Another spot may then be started as described above.

To monitor while recording, plug high impedance headphones or an amplifier and speaker combination into the monitor jack of the recording amplifier.

If recorded material is to be edited or changed, it is recommended that the material first be recorded on a conventional tape recorder and all revisions made, and then recorded on the cartridge.

When recording, the meter switch on the recorder must be kept in the "P" or program position, which indicates program recording level. A thirty day check of the "T" tone voltage and "B" bias voltage by rotating the switch to these positions is advisable. DO NOT CHANGE METER SWITCH WHILE CARTRIDGE IS BEING RECORDED. A NOISY TAPE WILL RESULT.

The meter in the "T" position should read approximately "0" VU, and when the start button is depressed should decay to zero in one-half second. The meter in the "B" or bias position should read approximately "0" VU.

5. Play Back Process

Rotate the Record-Play switch to "Play" and place the cartridge in position. Move the load lever to the "Play" position. The ready indicator light will then appear at the stop switch.

Momentary pressure on the "Start" switch will start tape travel across the heads.

To insert a live tag or to stop the tape for any reason before the spot is over and cued up again, press the stop button.

Do not remove the cartridge until the spot has ended and the ready light reappears at the stop switch, indicating the spot is cued and ready for re-use.

6. Remote Control

To use the SPOTMASTER Type 101 remote control unit, insert the remote control plug in the receptacle on the rear panel of the playback unit.

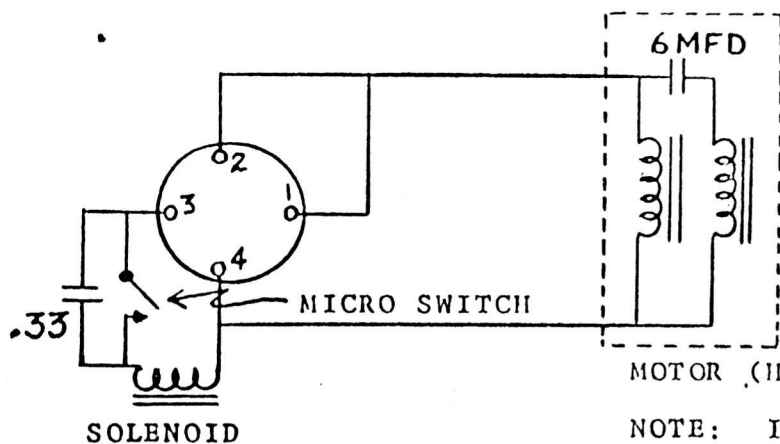
One, two or three machines may be started and stopped from a remote point. Machines stop automatically when the tape cartridge is re-cued.

* * *

NOTE: SPOTMASTER units are factory wired so that power is applied to the motor and amplifiers only when the

load lever is in the "play" position, and removed when the load lever is in the "release" position. Approximately 2 seconds is required for the motor to reach full speed and the amplifier power supply to reach full voltage after the load lever is placed in the "play" position. This is usually not objectionable since a cartridge is normally loaded well ahead of scheduled playback time.* If desired, however, the wiring may be changed so that amplifiers and the motor are controlled only by the on-off switch, thereby eliminating the 2 second lag. If wired in this manner, the motor will run as long as the switch is in the "On" position. See wiring change diagram below.

ALTERNATE MOTOR WIRING



Motor wiring as shown here is independent of load lever control and will run continuously when power switch is on

MOTOR (Hysteresis Synchronous)

NOTE: If equipped with 4 pole induction motor, the 6 mfd condenser shown above is eliminated

CIRCUIT DESCRIPTION

(1) Power Supply

Three DC power supplies furnish power for the operation of the equipment as follows: The first is a 270 VDC supply for the recording amplifier, the bias oscillator and the cue tone generator. The silicon rectifier and filter components for this supply are located on the recorder board.

The second is a 150 VDC supply for the tape transport ; solenoid and the "delay" relay. This also furnishes power for the neon signal lamps located within the "start" and "stop" switches. The silicon rectifier and filter for this unit are located on the relay board.

The third supply is a 30 VDC supply which furnishes power for the operation of the playback amplifier, the cue tone amplifier and the "power" relay. The silicon rectifier and filter components for this unit are located on the relay board.

(2) Control Circuitry

The manner of operation of the control circuitry will become apparent to the experienced technician upon examination of the diagrams, however, a few notes are in order:

(A) AC power is supplied to the motor and the 150 volt

power supply when the load lever is moved to the play position, thereby actuating a micro switch associated with it.

(B) Power is supplied to the tape transport solenoid through one set of contacts on the "power" relay (KCP11M). This relay is energized by momentary pressure on the start switch and latches in by establishing a circuit through a second set of contacts. If the stop switch is depressed, the hold current is interrupted and the relay drops out, thereby releasing the tape transport solenoid and stopping tape travel.

(C) The "delay" relay (KCP11) receives its energizing current through a set of contacts on the "power" relay when this relay is in the relaxed position. It instantly pulls down when the equipment is turned on and stays down until about two or three seconds after the start switch is depressed. This delay is caused by the discharge of a resistor-capacitor combination across its coil.

The function of the "delay" relay is two-fold. One is to delay application of power to the cue tone amplifier until the cue tone recorded on the tape has travelled safely past the cueing head when the "start" switch is depressed, and the other is to provide a delayed insertion of a resistor in series with the tape transport solenoid to limit the holding

current through its coil.

(D) The "record-play" switch, when in the "record" position switches the program head to the recording amplifier, applies filament voltage to the tubes of the recording amplifier and energizes the "record" indicator lamp. When in the "play" position, the program head is switched to the playback amplifier, filament voltage is removed from the recording amplifier and the "record" indicator lamp is de-energized.

(E) The recording gain control varies the audio input to the recording amplifier. The AC power switch is ganged with the recorder gain control.

(F) The output level control varies the output level of the playback amplifier.

(G) The meter selector control, when in the "P" position switches the VU meter to indicate program recording level, when in the "T" position indicates the momentary cue tone recording level, and when in the "B" position indicates the recording bias level.

(H) Essential circuitry for remotely controlling either the "start" or "stop" functions is available at the "remote socket" on the rear panel (see circuit diagram). A momentary connection across socket terminals 2 and 3 starts

the machine. A momentary connection through an external 47 ohm resistor across socket terminals 2 and 7 stops it.

(3) Cue Tone Amplifier

The cue tone amplifier is a modular, 4-stage transistorized amplifier driven by the tone head and receiving power from the 30 VDC power supply. The amplifier is mounted on the relay board by means of four screws under which are plated contacts that carry the necessary connections through to the associated circuitry on the relay printed circuit board. To remove the amplifier for service it is only necessary to remove the retaining screws. All connections are automatically remade when the amplifier is replaced. The manner of operation of the tone amplifier and the automatic stop circuitry is as follows:

The output transistor of the tone amplifier is connected across the power relay coil. When a tone is applied to the input of the amplifier it is amplified and causes current to flow in the output transistor. This effectively reduces the voltage applied across the power relay coil and causes the power relay to drop out, thereby instantly stopping the tape.

(4) Playback Amplifier

The playback portion of the equipment consists of a modular, 3-stage transistorized program amplifier driven by the

program head. The program head is alternately switched between the playback amplifier and the recording amplifier, depending upon the operational mode. The amplifier is powered by a power supply utilizing a single silicon diode rectifier and associated filter components. The amplifier is conventional in design with the frequency response adjusted to comply with reproducing standards in general use throughout the industry for extended high end response at $7\frac{1}{2}$ IPS. The amplifier is secured in position by means of five screws under which are plated contacts which carry the necessary connections to the associated circuitry on the relay printed circuit board. To remove the amplifier for service it is only necessary to remove the retaining screws. All connections are automatically remade when the amplifier is replaced.

(5) Recording Unit

The recorder consists of a recording amplifier equalized for magnetic tape recording characteristics and designed for line level audio input voltages. The high frequency portion of the equalization curve is adjustable over a limited range (approximately 5 db @ 12 kc) by means of the control labeled "freq. adj." shown on the chassis wiring diagram. This control is properly adjusted at the factory, however, and

normally would require no further adjustment in the field.

Recording bias is adjustable and is supplied by a single push-pull oscillator utilizing a 12AU7 tube. Bias is properly adjusted at the factory but if readjustment should become necessary in the field, conventional procedures should be followed. The bias voltage as measured across the program head should be approximately 50 volts when measured with a VTVM and reads approximately "0" VU on the VU meter with the meter selector switch in the "B" position.

The bias balance control equalizes the current between the two sections of the 12AU7 bias oscillator tube. The control should be adjusted for equal voltages across the two 3.3k ohm cathode resistors (see recorder amplifier schematic).

The control tone recorded on the tape is supplied by a phase shift oscillator and amplifier combination utilizing a 12AX7 tube located on the recorder amplifier board. Depressing the start switch starts tape motion as well as automatically applying the correct length and amplitude of control tone to the tape control track.

Other features of the recorder will become apparent upon examination of the circuit diagram.

INSTALLATION AND MAINTENANCE NOTES

- (1) Avoid installing equipment in overheated areas. Provide good ventilation. SPOTMASTER amplifiers are heat compensated to 140°F, but some transistors are temperamental at higher temperatures. Therefore, do not install equipment over a console or other heat generating devices.
- (2) SPOTMASTERS are designed for long, trouble-free operation, but good maintenance procedures should be followed. Occasionally remove the tape deck from each unit and clean out any accumulation of dust or dirt.
- (3) For best results, clean heads, pressure roller and capstan drive shaft each day with BE Type 903 cleaning fluid or equivalent.
- (4) As in much electronic equipment, the minimum noise output is sometimes affected by the polarity of the AC power plugs. Correct polarization will help to reduce residual noise to a minimum.
- (5) A good connection to ground is essential, especially when operating in high RF or magnetic fields.
- (6) Any change in the characteristics of transistors will usually be evidenced by low gain and/or increased distortion. If it is necessary to change a transistor, be certain to follow recommended practices as to soldering. Transistors are extremely heat sensitive and can be damaged during installation by the application of too much heat during the soldering process.
- (7) Both tone and program heads are properly aligned before leaving the factory, but after considerable use it may be desirable to re-align the program head in the field. This is indicated by a loss in high frequencies which cannot be restored by cleaning of the heads as described in Item #3 of this section. To align the program head, place a BE head alignment cartridge on the tape deck, and using a

small end wrench loosen the nut holding the head in place. Start the tape in motion and orient the head so as to obtain maximum tone output as observed on a suitable meter connected to the output of the playback amplifier. Tighten the head nut while observing the meter to assure no loss in tone output while securing the head. The alignment of the tone head is non-critical and usually no adjustment is ever necessary during its normal life.

(8) Relays are of the sealed plug-in type. In case of failure, either of the two relays are easily replaced.

(9) Both the tone amplifier and the playback amplifier are easily removed for servicing, if necessary, by simply removing the mounting screws. No wiring or solder connections need be removed. All connections are made by plated contacts under the screw heads.

(10) LUBRICATION:

Oilite bearings are used for the capstan and flywheel, and further lubrication should not be necessary. Depending upon environment and conditions of use, however, it may be desirable to add one drop of #10 oil to the top fly wheel bearing occasionally.

The bearings on the drive motor are of the sealed self-lubricating type and should require no further lubrication. However, as stated above, an occasional drop of very light oil applied to the shaft as it enters the top bearing may improve performance over a period of time.

Occasional lubrication at points in the assembly may be necessary where sliding parts come together. "Lubriplate" or similar lubricant is recommended.

MECHANICAL ADJUSTMENTS

All of the adjustments described below are made before your SPOTMASTER equipment leaves the factory, but the following notes are furnished in the event readjustment should become necessary in the field:

(1) TAPE CREEPAGE:

An adjustable stop is provided under the load lever cover plate to limit the travel of the load lever when in the "Ready" or "Play" position. Its purpose is to prevent tape creepage when a cartridge is in position ready for playback but before the "Start" button is depressed. If necessary, the stop should be adjusted so that, when a cartridge is in place, the pressure roller will clear the capstan by approximately 1/16" when the load lever is held firmly against the stop.

(2) PRESSURE ROLLER ADJUSTMENT:

If necessary, the adjustment of pinch roller pressure is easily made from the rear of the tape deck by inserting a screw driver through a small hole found near the rear center of the tape deck. Turning clockwise increases pinch roller pressure. Too tight an adjustment may cause slow tape speed and perhaps tape creepage through the cartridge when the machine is idling. Too tight an adjustment may also keep the capstan solenoid from seating properly, resulting in solenoid "drop-out" a few seconds after the "start" button is depressed. Too loose an adjustment will cause tape slippage or perhaps too fast tape speed. Correct adjustment will result in a small dimple approximately 1/64" deep in a new pinch roller when the machine is running, and will exert approximately 1½ to 2 lbs. pull on a short length of non-lubricated tape such as MM-111A.

CAUTION: Clean pinch roller and capstan thoroughly before making adjustment.

IMPORTANT: Tighten solenoid swing arm retaining screw (under side of deck) before adjusting pinch roller. This may correct your trouble.

(3) HEAD BRACKET ADJUSTMENT:

The head bracket is adjustable by loosening the two retaining screws under the cover. The head bracket may then be moved forward or backward as desired. The best adjustment is obtained when, with a cartridge in place, the pressure pad spring is approximately parallel to the faces of the heads. Under this condition the head penetration into the cartridge will be approximately $9/32$ " when measuring from the leading edge of the cartridge to the FACE of the head. Correct adjustment is important in order to prevent head wear, loss of high frequencies and variations in frequency response during reproduction.

(4) STRIKING ANGLE OF PINCH ROLLER:

The striking angle of the pinch roller as related to the capstan is determined by the position of the solenoid. The correct adjustment of the solenoid is made at the factory but if for any reason it is necessary to change it, the solenoid may be moved slightly up or down as required by loosening the two mounting screws on the side. Correct adjustment is obtained when, with the swing arm held firmly against the face of the solenoid, the pressure roller strikes the capstan squarely. If the solenoid is readjusted, it will then be necessary to readjust the roller pressure as well as the load lever stop, as described in items No. 1 and No. 2 above. After the solenoid mounting screws have been re-tightened, make certain that the swing arm face plate meets the face of the solenoid squarely so as to provide the necessary holding power.

(5) FLY WHEEL THRUST BEARING:

The thrust bearing at the bottom of the fly wheel should be adjusted to provide for minimum friction to the fly wheel. The adjusting screw is located at bottom center of the fly wheel shaft and is secured by a locking nut. Correct adjustment is indicated when the shaft collar above the top bearing slightly clears the top bearing. Adjustment of the horizontal alignment of the bottom thrust bearing is possible by loosening the two nuts holding the thrust bearing mounting plate in place and moving the plate from side to side as required. When the two adjustments have been properly made, the fly wheel should spin freely.

SOME HELPFUL HINTS IN THE OPERATION OF YOUR SPOTMASTER

- (1) Be sure each operator is instructed in the proper operation of the equipment. Sometimes, apparent equipment failure is due to operating errors.
- (2) Before recording, be certain each cartridge is bulk erased. For your protection, SPOTMASTER playback and recording units are not equipped with erase heads. Erase the cartridge on both sides and then tip up on the tape end. Check cartridge pressure pads for proper seating against the heads. Check for free and easy movement of the cartridge rotor release spring.
- (3) Be careful that correct levels are maintained during the recording process. If all recordings are made at the same level, comparatively few adjustments are necessary in the playback process.
- (4) When inserting a cartridge in the playback unit, always move the load lever firmly against the stop.
- (5) Easy identification of cartridges is possible by the application of SPOTMASTER Tape-Tags.
- (6) On playback, always let cartridge run after the announcement ends until it automatically stops and the lamp in the stop button reappears. It will then be cued and ready for re-use.
- (7) Store cartridges at normal room temperature for best results.
- (3) For best results, clean heads, capstan drive shaft and rubber pressure roller daily with BE Type 903 Cleaning Fluid. This is extremely import. Lubricated tape is used in all cartridges and some of the lubricant is naturally deposited on these parts during the playing process.

- (9) It is comparatively easy to check whether or not you are recording a control tone on the tape in the recording process by connecting the playback head lead to the tone head. The tone, if properly recorded, will then be heard through the playback amplifier.
- (10) When recording a short spot, for example, one 20 seconds in length, three identical spots may be recorded on a 70 second cartridge. This reduces cue-up time to a minimum. Similarly, six 10 second station breaks can be placed on a 70 second cartridge.
- (11) IMPORTANT: If the "Start" button is accidentally depressed before placing a cartridge in position, the lamp in the stop button will not light when the load lever is moved to the "play" position, and the machine will not start when the "Start" button is depressed the second time. This condition can be immediately corrected by depressing the "Stop" button. The lamp will then indicate "ready" and the machine can be started by depressing the "Start" button.
- (12) A good practice to follow when recording new or rewound cartridges is to first run the tape until the splice travels two or three inches past the head assembly. The tape should be stopped at this point. Recording can then proceed in the usual manner.

If this is done, the possibility of recording over the splice will be eliminated. Recording over the splice quite often produces a slight "bump" or drop out during the playback process.

TABLE OF TYPICAL VOLTAGES (BE 500A)

PLAYBACK AMPLIFIER

	E	B	C
TR1	.6	.7	6.5
TR2	6.5	6.7	14
TR3	.55	.7	11

TONE AMPLIFIER*

TR4	.8	.9	8.5
TR5	.3	.35	9
TR6	0	.2	7
TR7	.2	0	15 to 20

MICROPHONE PREAMPLIFIER (Compact Model Only)

TR8	.4	.5	6
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V1 BIAS OSCILLATOR 12AU7

1. 235
2. 17 neg.
3. 6
4. 0
5. 12.6 AC
6. 235
7. 17 neg
8. 6

V2 TONE OSCILLATOR 12AX7

1. 75
2. 1.2
3. 1.2
4. 12.6 VAC
5. gnd
6. 125 in "Stop" mode
7. Do not measure
8. 1.2 in "Stop" mode

V3 RECORD AMPLIFIER 12AX7

1. 145
2. 12
3. 17
4. 12.6 VAC
5. gnd
6. 115
7. 0
8. .7

V4 METER DRIVER 12AV6

1. 7.6
2. 10
3. 12.6 VAC
4. gnd
5. gnd
6. gnd
7. 220

Tube Socket Pin designation from bottom view

RECTIFIER - CR3 (U214) OUTPUT 265V

Input to filter 255V
Output of filter to oscillator 235V
Output of filter to amplifier 220V

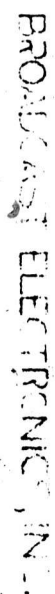
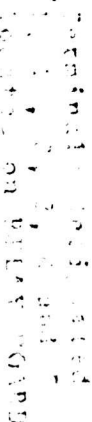
All transistor voltages are negative when measured to ground with a vacuum tube voltmeter.

*All voltages for TR4, TR5, TR6 and TR7 are present only with the solenoid energized.

I M P O R T A N T

The recovery time of the primary cue tone generator (after a recording has been completed) is approximately 3 to 4 seconds. It is therefore essential to wait at least 5 seconds between recordings to assure proper recording of the cue tone on the tape.

534-115 (Model 505)
534-114 (Model 506)

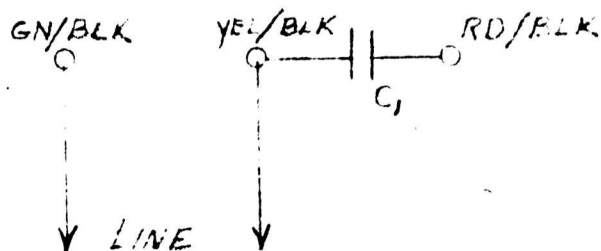
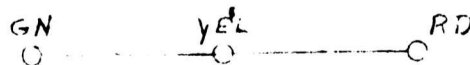


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19606 1/2

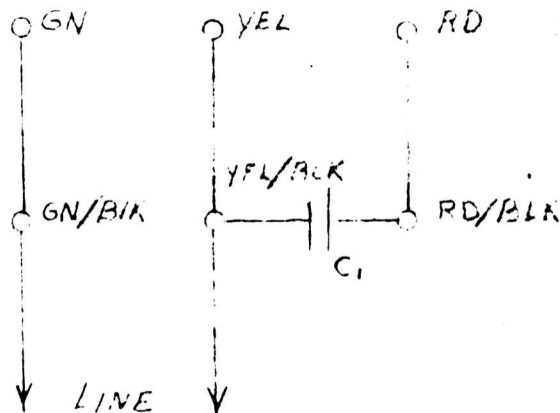
Wiring for 50 cycle motor

220 volts 50 cycles
HSM 20.50-4-510D
2.5 mfd. Capacitor

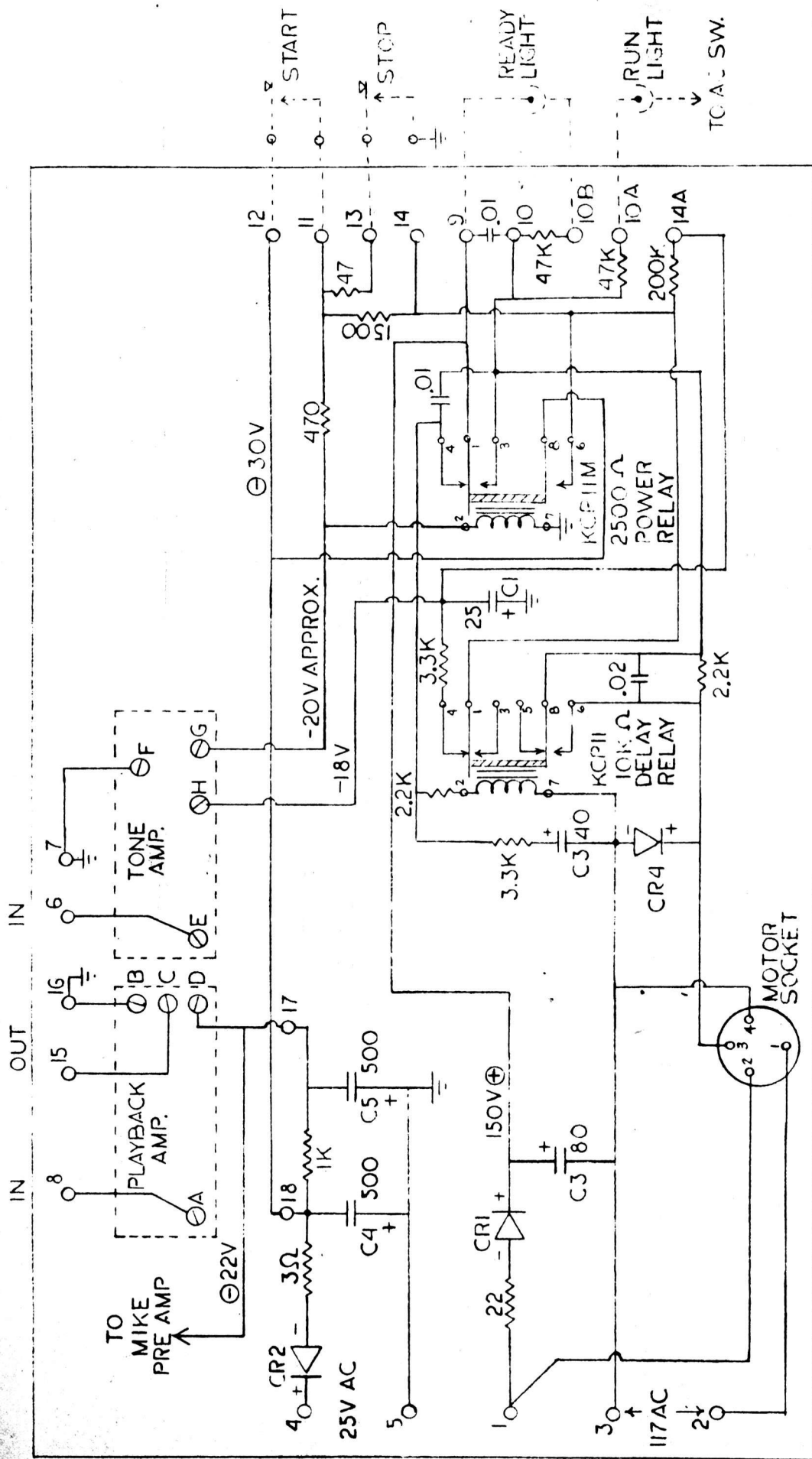


To change direction reverse Rd/Blk, Yel/Blk

125 volts 50 cycles
HSM 20.50-4-510D
8 mfd. Capacitor



To change direction reverse Rd & Rd/blk, Yel & Yel/blk

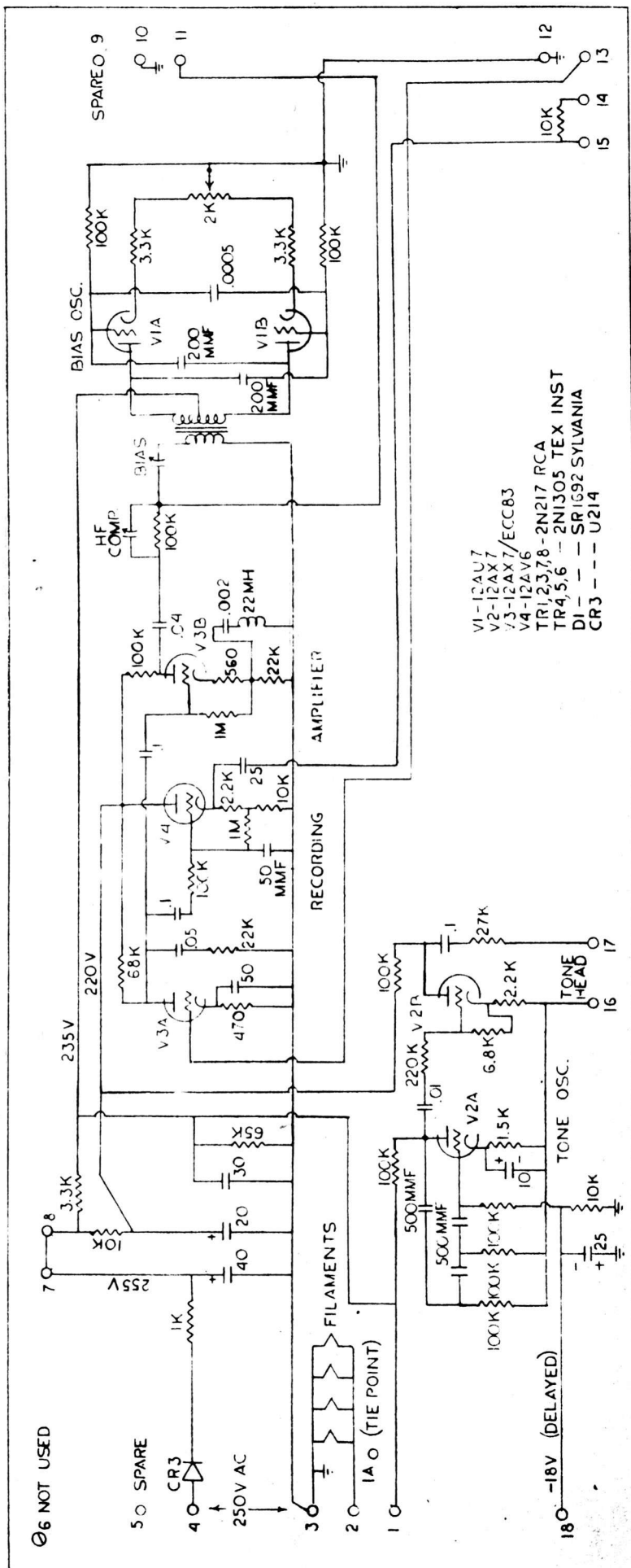
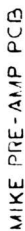


RELAY PRINTED CIRCUIT BOARD

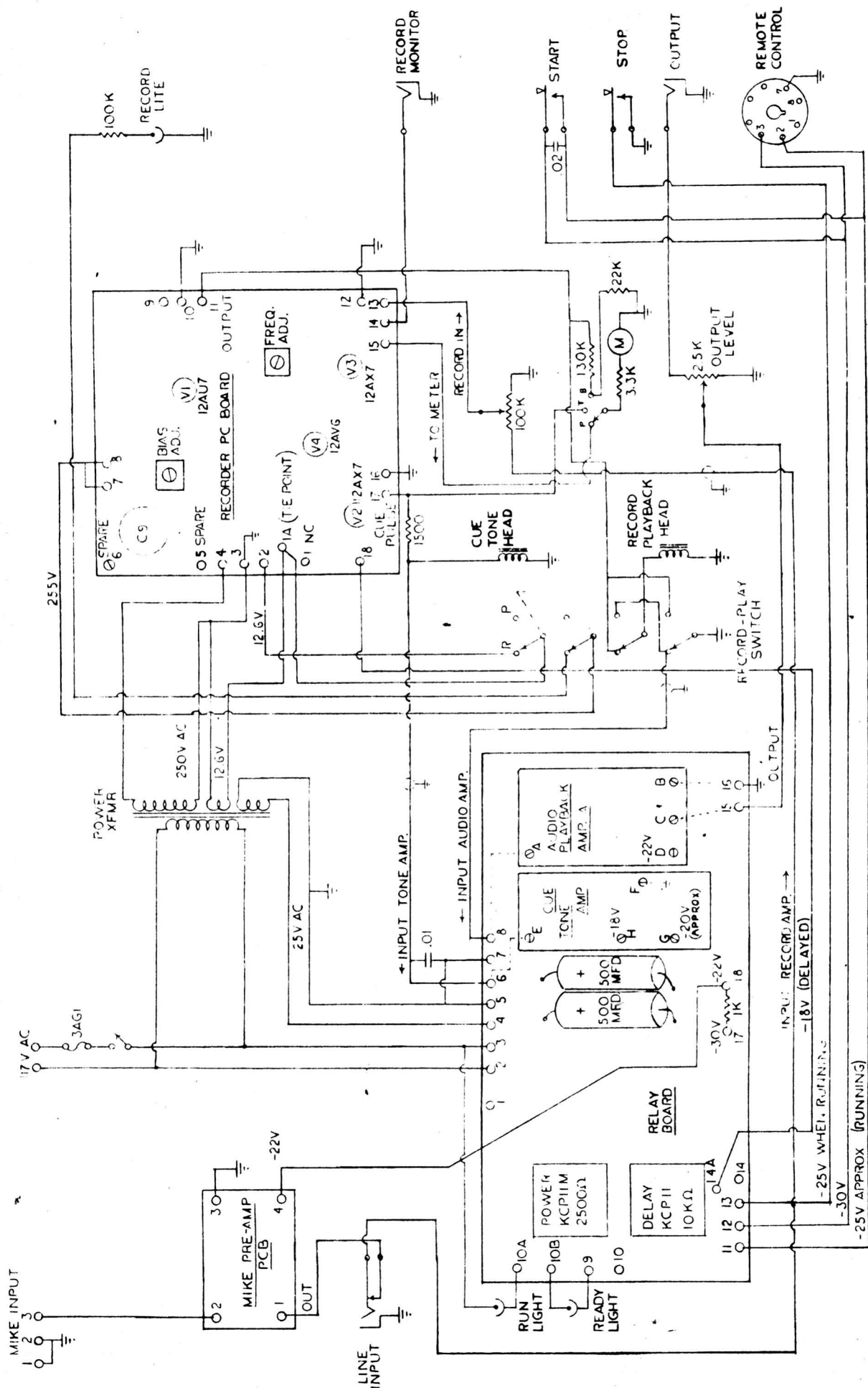
SPOTMASTER 500A

BROADCAST ELECTRONICS, INC.
63D16

CR1, CR4-U214
CR2-U212



VI-12AU7
V2-12AX7
V3-12AX7/ECC83
V4-12AV6
TRI,2,3,7,8-2N217 RCA
TR4,5,6 -- 2N1305 TEX INST
DI -- -- SR1G92 SYLVANIA
CR3 -- -- U214



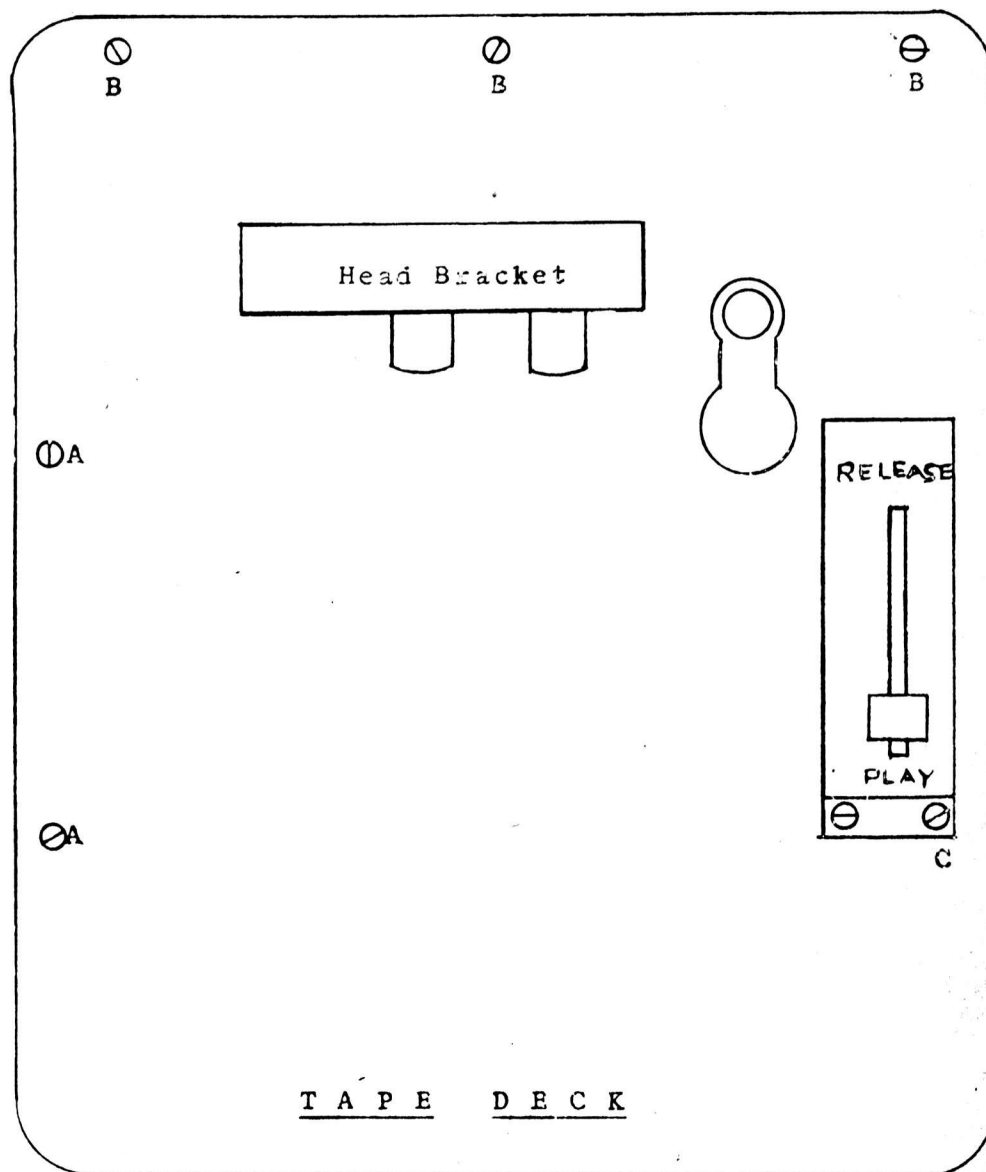
CHASSIS WIRING

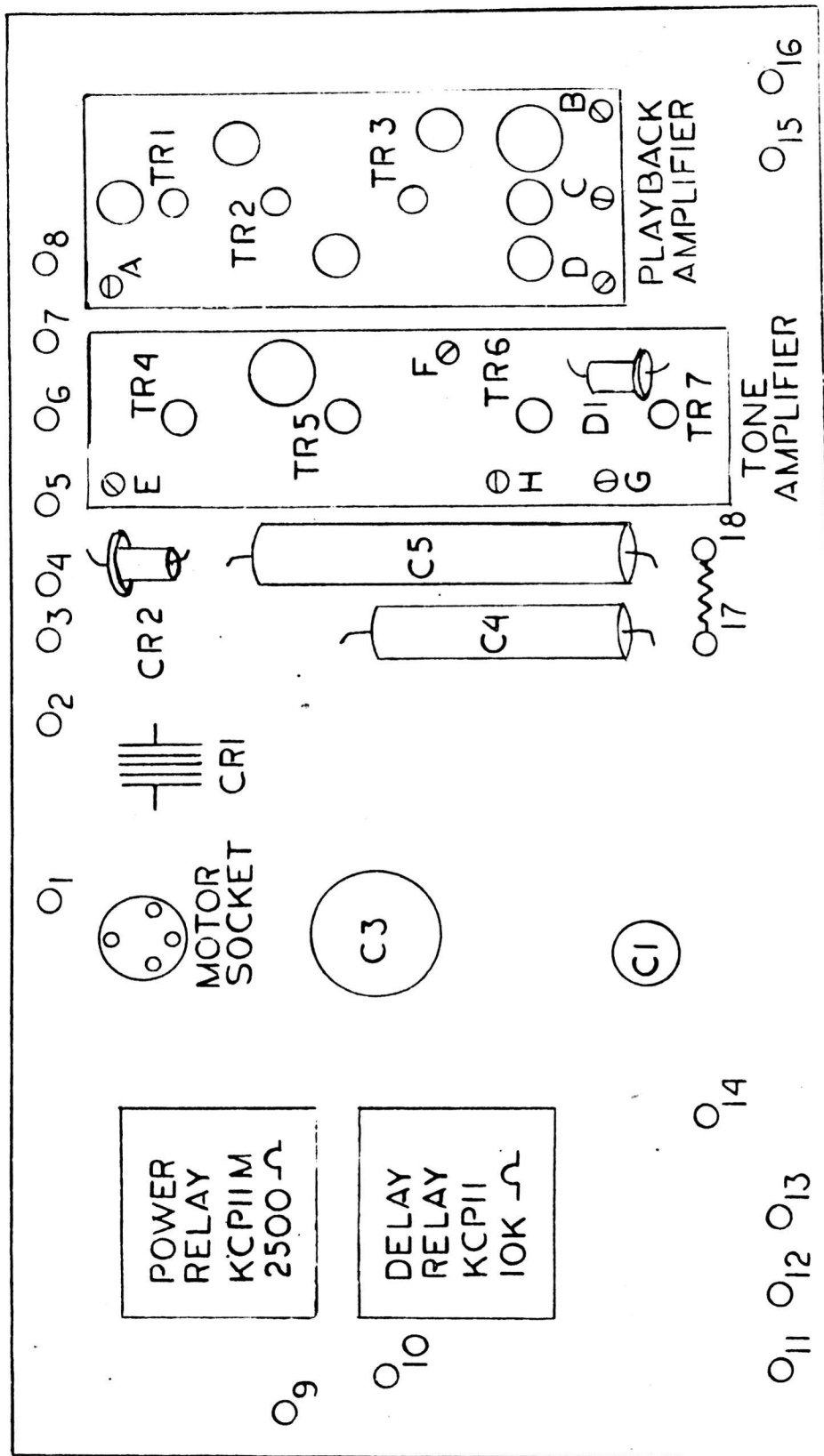
BROADCAST ELECTRONICS, INC.
SPOTMASTER BE500

63D18

I N S T R U C T I O N S F O R R E M O V A L O F T A P E D E C KS P O T M A S T E R M O D E L S 5 0 0 a n d 5 0 5

- (1) Remove head lead plugs
- (2) Remove screws marked A, B and C only
- (3) Lift deck and remove motor plug from relay board
- (4) Remove deck from case





COMPONENT LAYOUT BE505

INSTRUCTIONS FOR REMOVAL OF TAPE DECK

SPOTMASTER MODELS 500 and 505

- (1) Remove head lead plugs
- (2) Remove screws marked A, B and C only
- (3) Lift deck and remove motor plug from relay board
- (4) Remove deck from case

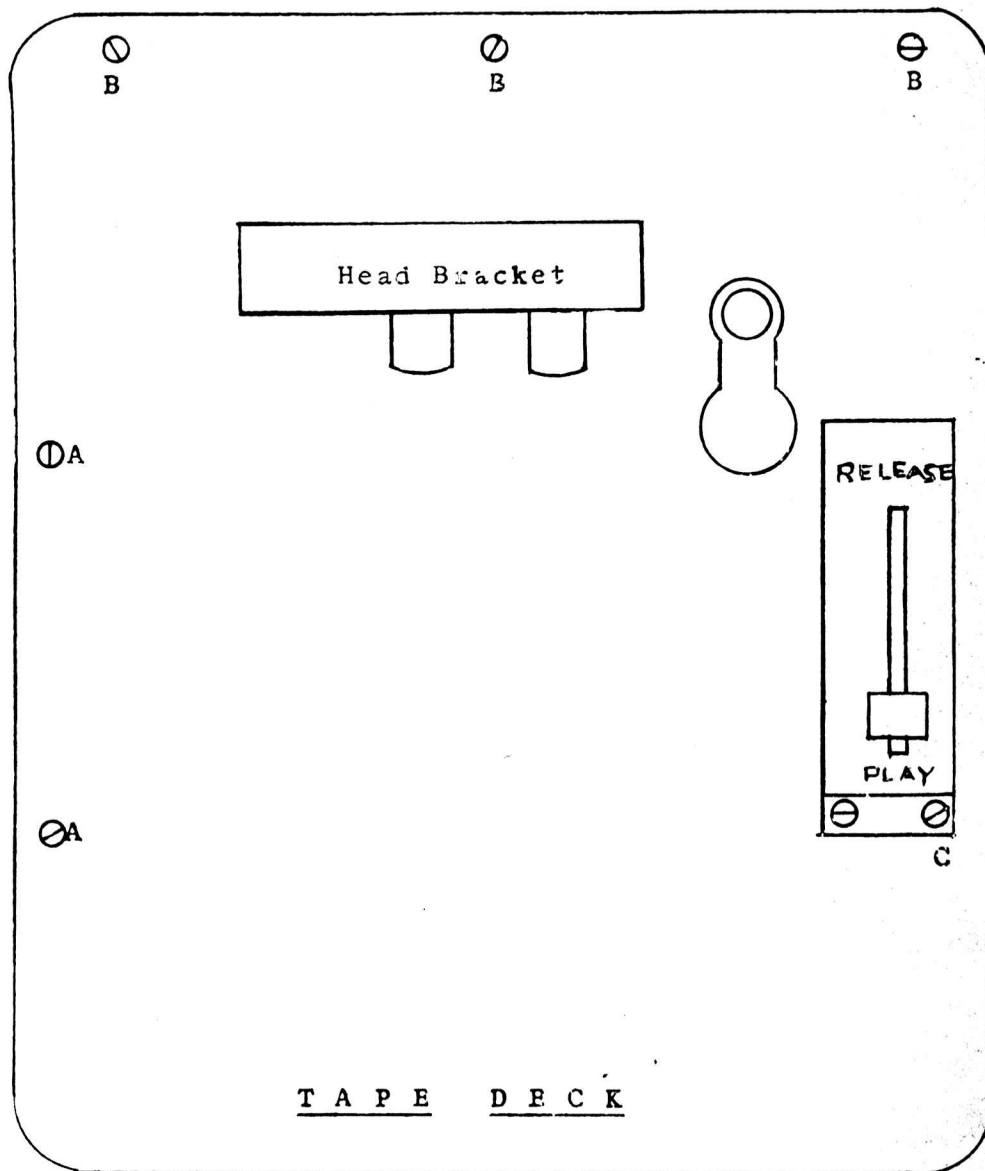


TABLE OF TYPICAL VOLTAGES*

PLAYBACK AMPLIFIER (BEP 505)

	E	B	C
TR1	.6	.7	6.5
TR2	6.5	6.7	14
TR3	.55	.7	11

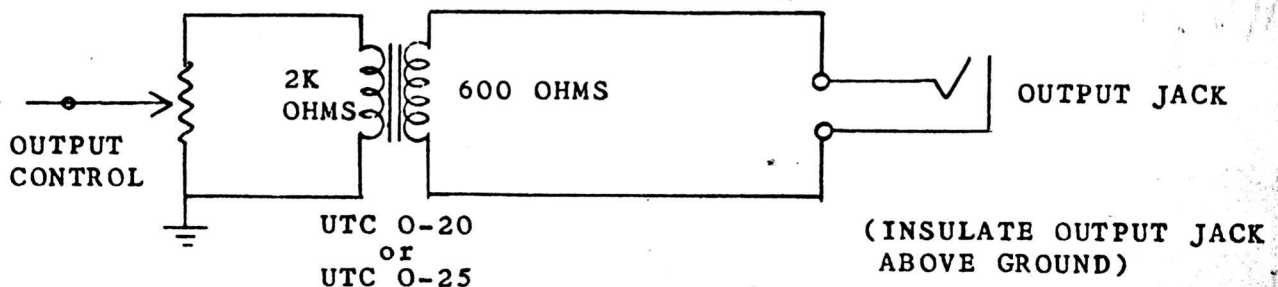
TONE AMPLIFIER**

TR4	.3	.9	3.5
TR5	.3	.35	9
TR6	0	.2	7
TR7	.2	0	15 to 20

* All DC voltages are negative when measured to ground with 20,000 ohm/volt voltmeter.

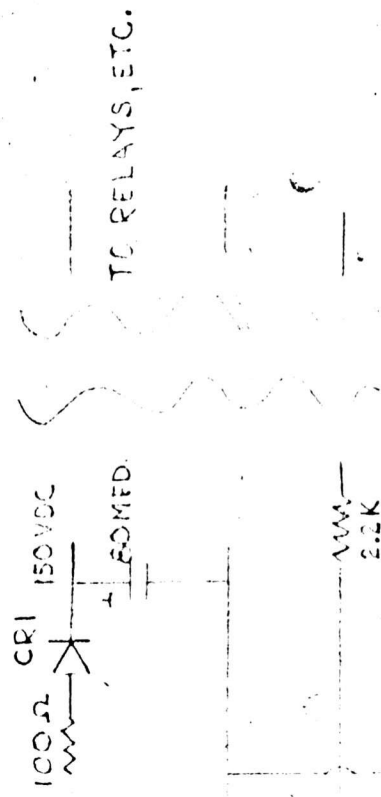
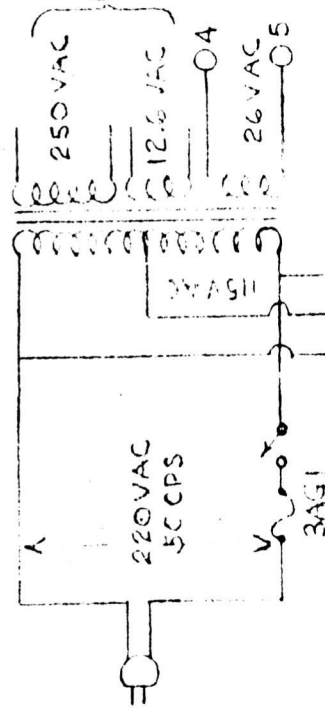
** All voltages for TR4, TR5, TR6 and TR7 are present only with solenoid energized.

OPTIONAL OUTPUT TRANSFORMER WIRING

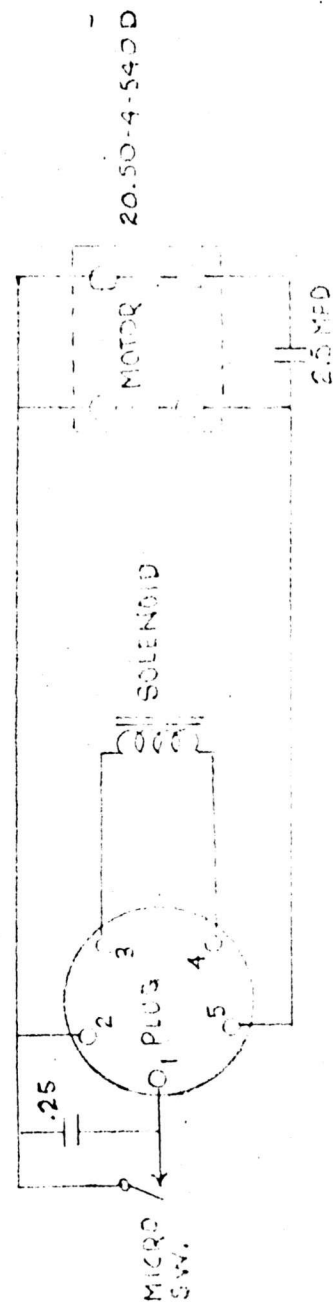


200 VOLT TRANSFORMER AND MOTOR WIRING FOR SPOTLIGHTER MODELS 500A AND 505A

1534-115 (MODEL 505)
1534-114 (MODEL 500)

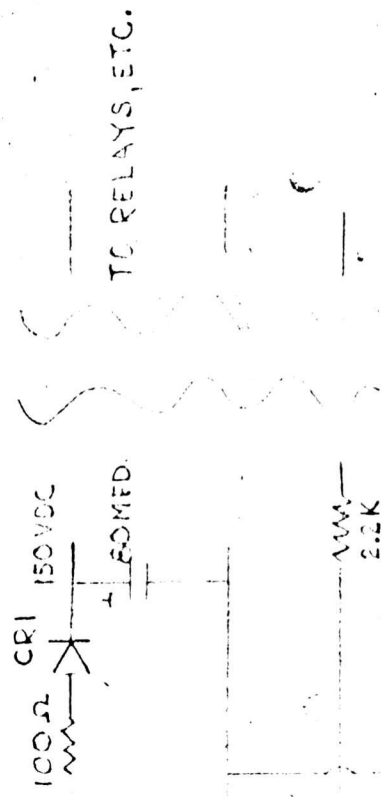
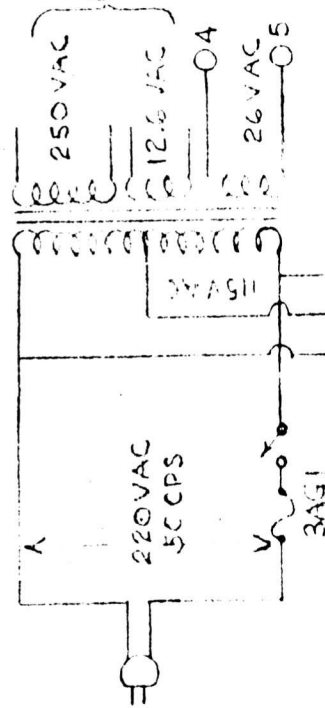


Terminal designated
1, 2, 3, 4 and 5
located on RELAY BOARD



200 VOLT TRANSFORMER AND MOTOR WIRING FOR SPOTLIGHTER MODELS 500A AND 505A

1534-115 (MODEL 505)
1534-114 (MODEL 500)



Terminal designated
1, 2, 3, 4 and 5
located on RELAY BOARD

